

# **The Digital State: Advanced Telecommunications Services in Iowa and Synthesis of Input From Service Providers and Stakeholders April – June, 2000**

## **Introduction**

Advances in telecommunications and computer technology have had a significant impact on all aspects of Iowans' personal and professional lives. Information tools such as personal computers and the Internet have created new avenues for economic development and personal betterment. However, the rapid advancement of technology, including the emergence of wireless technologies, has brought about a disparity in who has access to computers and advanced telecommunications services (ATS)<sup>1</sup>, in particular, access to affordable, high-speed Internet access.

This disparity, commonly referred to as the “digital divide,” primarily affects individuals who have lower-incomes, are less well-educated, are older, or who live in more sparsely populated areas. Although debate about the magnitude of the digital divide and solutions to bridging the divide continues, there are clear indications that certain segments of the population are being left behind.

Being digitally connected at a high speed and at an affordable cost is recognized as a fundamental necessity for economic growth and a high quality of life. Ensuring that all Iowans have affordable access to computers and advanced telecommunications services is critical to the economic future of the state. Other states are engaged in similar efforts to strengthen economic development efforts and quality of life for their citizens. To be competitive in today's economy, Iowa must engage in a comprehensive effort to deploy ATS statewide.

Providing businesses and individuals with ATS has become a defining characteristic of a state that is prepared to compete in the global market. The emergence of the Internet as an important business tool has made advanced telecommunications services an essential asset to businesses of all sizes. ATS allows businesses to develop and implement an e-commerce strategy that provides information to existing and potential customers, while also improving customer service by offering the convenience of on-line service and assistance.

The availability of affordable ATS has become a primary factor in location and expansion decisions by businesses. In recent years Iowa communities have seen major

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<sup>1</sup> The 1996 Telecommunications Act defines ATS “without regard to any transmission media or technology, as high speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.”

corporations relocate to other areas because of their inability to provide them with advanced telecommunications services. Likewise, companies have chosen not to locate in some Iowa communities based in part on the area's lack of ATS. For example, the inability of Fridgidaire to secure ATS from the local telecommunications provider played a significant factor in the company's relocation outside the city of Manning. Clearly, Iowa's economic future relies to a great extent on its ability to provide advanced telecommunications services to businesses.

Affordable ATS is also becoming increasingly important for Iowa households, both for professional and personal reasons. The rise in telecommuting and home-based businesses has heightened the need for high-speed Internet access, which allows employees to work efficiently at home by allowing them to quickly download and transmit information, as they do in traditional workplaces. Similarly, individuals using the Internet for studying, leisure activities, or personal betterment are accessing web pages with more complex content and graphics that require high-speed connections.

Recognizing the importance of access to computers and ATS, the State of Iowa engaged in an effort to identify issues, address barriers, and develop solutions to bridge the digital divide. Under the leadership of Robert Tibor, the State of Iowa Science and Technology Advisor, the Digital Divide Work Group undertook this effort and identified four primary issues that affect Iowa's ability to provide advanced telecommunications services to all Iowans: public investment, regulation, existing state assets, and level of service.

Public investment encompasses various tools government can utilize to encourage ATS deployment such as incentives, subsidies, and tax exemptions. Regulation includes regulatory structures that relate to telecommunications. Existing state assets refers primarily to the Iowa Communications Network and its role as a publicly-owned telecommunications provider. Finally, level of service pertains to the expectations for basic services and the costs associated with those services.

From the work group's initial discussions, it became evident that addressing these issues falls primarily into supply and demand policy categories. The digital divide can be addressed through the supply side by providing incentives to encourage public/private investments, leveraging existing state assets, and making adjustments in telecommunications regulations.

The demand side includes a variety of efforts that can be developed and implemented to increase consumer awareness and stimulate demand for advanced telecommunications services. Efforts on the demand side include business/consumer subsidies, documentation and distribution of best practices, education and training, community/regional telecommunications planning, assessments and benchmarking of consumer/business demand, and pilot projects.

Because the digital divide affects several different segments of the population, input from many individuals, including telecommunications providers, business, education, labor,

and citizen representatives, was gathered and considered in developing this report. (A complete list of meetings and participants in this process is included in the appendix.)

Participants in this effort agreed that it is important for the State to clearly define what public purpose or public good needs to be achieved before crafting specific interventions in the marketplace. Generally, a public good is described as a service or benefit that cannot be affordably secured by individuals, and must be achieved through some collective action or pooling of resources, typically through a government entity or program. The following public good was largely agreed upon by participants:

*Provide all Iowans with affordable access to advanced telecommunications services. Providing advanced telecommunications services will result in a more competitive infrastructure for economic growth and for a high quality of life.*

With this public purpose in mind, participants identified several possible solutions to providing Iowans with access to advanced telecommunications services. These options are outlined in the section titled “Policy Options for ATS Deployment.”

It should be noted that two other statewide efforts – the Iowa 2010 Strategic Plan and the Iowa Rural Development Council Place Competitiveness Project – have identified access to and use of advanced telecommunications services as essential to Iowa’s future. The June 8, 2000, draft of the Iowa 2010 Strategic Plan identifies the following goal:

*Iowans are electronically connected to each other and to the world. Access to advanced telecommunications services statewide and a continuing ability to take advantage of emerging technologies have moved Iowa to the forefront in education, e-commerce, teleworking, telemedicine, community development, and other new fields and revitalized rural economies.*

The Iowa Rural Development Council (IRDC) recently completed an effort to define the characteristics of a competitive community in Iowa. As part of this effort, the Council determined that to be technologically competitive, Iowa communities must offer life-long technology education opportunities, have technology savvy citizens and businesses, support research and development efforts, and facilitate technology transfer to local industry. From these characteristics, three key technology opportunities were identified to pursue with the IRDC’s economic development partners: building rural business technology capacity, developing a technology capacity building guide for communities, and creating Internet-proficient Iowans.

### **The Digital Divide in Iowa**

There is a common perception that the digital divide affects individuals and businesses primarily in rural areas; however, evidence shows that the divide (as it relates to computer and Internet access) has a greater impact on individuals who have lower incomes, are less well-educated, or who are older. While gaps in advanced

telecommunications services deployment tend to be located in more sparsely populated areas, gaps also exist in larger cities and suburbs.

A December 1999 report by the Progress & Freedom Foundation indicates that 58 percent of Iowans have a computer at home. The National Telecommunications and Information Administration's (NTIA) "Falling Through the Net" study found that nationwide the digital divide distinctly falls into income, education, and age categories. Eighty percent of households with incomes above \$75,000 have a computer in their homes, while 35 percent of those earning \$25,000 - \$34,999 and 21 percent of households earning between \$15,000 - \$19,999 have a computer. Likewise, the level of education factors into the digital divide. Nationally, 15 percent of households with some high school education own a computer, while 31 percent with a high school diploma or GED and 70 percent with a BA or above own computers. Age also plays a role in this divide with households over age 55 having the lowest computer ownership at 26 percent, while households 35-44 years old having the highest computer ownership at 55 percent.

The divide is also evident in who has access to the Internet. Forty-three percent of Iowans have Internet access at home and 28 percent have an Internet connection at their workplace. Individuals noted that the single largest complaint about their Internet access at both home and work is slow connections.<sup>2</sup>

Nationally, income, education, and age also distinguish household Internet access. Sixty percent of households with incomes above \$75,000 have Internet access, while 12 percent of those earning \$25,000 - \$34,999 and 10 percent with incomes between \$15,000 - \$19,999 have access. Six percent of households with some high school education have Internet access, while 16 percent with a high school diploma or GED and 49 percent with a BA or more have access. Again, age factors into the divide with households 55 years and older having the lowest access at 15 percent, and 34 percent of households 35-44 have Internet access.<sup>3</sup>

Although reliable information on availability of advanced telecommunications services is minimal at best, some surveys show that 13 percent of Iowans who have Internet connections at home have high-speed access and 40 percent of Iowans who have Internet access at work have high-speed access through cable modem, ISDN, or a high-speed dedicated line.<sup>4</sup>

It should be noted that while many communities are seeking high-speed Internet access, there are still several Iowa communities that still do not have non-toll access to an Internet service provider (ISP). According to the Iowa Utilities Board, 51 local telephone exchanges (six percent of Iowa's exchanges) or 19,630 access lines (one percent of Iowa's total lines) were without non-toll access, as of March 31, 2000. Individuals and

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<sup>2</sup> "Digital Iowa: How Citizens Assess the Digital Revolution." October 1999. Progress & Freedom Foundation.

<sup>3</sup> "Falling Through the Net: Defining the Digital Divide," National Telecommunications and Information Administration. July 1999.

<sup>4</sup> "Digital Iowa: How Citizens Assess the Digital Revolution." October 1999. Progress & Freedom Foundation.

businesses in these exchanges must pay the ISP fee in addition to the toll charge to connect to the ISP, which can become cost-prohibitive.

To fully understand the current level of ATS deployment and the demand for ATS, additional information is needed from telecommunications providers and the general public. However, conversations with providers, consumers, and businesses have made it clear that there are differing opinions on the level of demand, as well as current access to ATS. A large number of telecommunications providers say the demand for ATS in many areas is not sufficient to justify deployment which would result in a low return on investment. Consumers and businesses disagree and say the demand is there.

An additional argument is made that many consumers and businesses do not understand the advantages and benefits of advanced telecommunications services and, therefore, do not ask their providers for these services. Implementing an education effort should be included as part of the State's overall strategic initiative. Providing information to Iowa consumers and businesses on the benefits and advantages of computers, the Internet, and advanced telecommunications services will result in more knowledgeable Iowans who are able to make informed telecommunications choices and increase the overall demand for ATS.

Closely associated to providing information to consumers and businesses is providing training on how to use computers and the Internet. Although these tools have become part of many individuals' daily lives, there are many Iowans who do not know how to use a computer or the Internet. Providing Iowans, including teachers, with computer and Internet training can reduce common technology phobias and also help to increase demand for ATS.

The digital divide has a double meaning in Iowa. The divide represents not only a description of technology haves and have nots, it also represents the level of distrust that exists among competing service providers and between service providers and the State of Iowa.

Bridging the digital divide is further complicated by a lack of trust among telecommunications providers and between providers and the State. The threat of increased competition for customers has heightened the level of distrust among telecommunications providers, including telephone, long-distance, cable, wireless, and Internet providers.

The role of the State in telecommunications, primarily through the state-owned and operated Iowa Communications Network (ICN), has added to the distrust between the private service providers and the State. Private providers have noted the uncertain future of the ICN as a significant barrier to addressing ATS gaps throughout the State. There is a perception by providers that the State has not made a commitment to limiting the role of the ICN to carrying out its original charge. Each legislative session brings renewed discussions among lawmakers on expanding the customer base of the ICN, which adds to the distrust.

Although it is a difficult obstacle to overcome, the State should include in its strategic initiative a strategy to increase the level of trust between providers and the State.

The emerging role of municipal telecommunications utilities has also contributed to this distrust. Although there are many reasons why communities have chosen to establish telecommunications utilities – including economic development, a desire to improve local educational opportunities, and the preparation by city electricity and gas utilities for competition – discussions with representatives of Iowa municipal telecommunications utilities revealed a predominant reason: dissatisfaction with incumbent service providers. There is some evidence that the presence of municipal telecommunications utilities has increased local competition and compelled providers to become more active in ATS deployment in those areas.

#### *Where is ATS Deployed in Iowa?*

There is no easy answer to this question. Although many telephone, long-distance, cable, wireless, and municipal telecommunications providers are engaged in efforts to deploy ATS, there is no single source in Iowa that brings together this information to determine how broadly and how quickly these efforts are being made. Without a comprehensive, on-going assessment that incorporates a mechanism to benchmark progress in deployment, the State will be unable to effectively target its resources to where they are most needed.

Currently, the Iowa Department of Economic Development is implementing three telecommunication assessment pilot projects in two communities and one county. This project incorporates community understanding of telecommunications issues, cooperative efforts among all local service providers, market studies, and development of an action plan. These projects have proven to be particularly effective in bringing together local service providers and communities to solve telecommunications gaps cooperatively. While this may prove to be a useful model for other communities, its reach is limited and future funding to assist other communities is uncertain.

At the request of the Iowa General Assembly, the Iowa Utilities Board is undertaking a statewide ATS deployment assessment to be completed by October 2000. However, at this time, it is unclear what the scope or future of the assessment will be. An effective assessment process must be statewide and ongoing to ensure full ATS deployment.

#### *Current Activities to Address Gaps in E-commerce, Telecommunications, Internet Access*

Economic development service organizations are developing and implementing a variety of initiatives to help businesses and consumers engage in e-business and e-commerce. The Iowa Manufacturing Extension Partnership (IMEP) and the Center for Industrial Research and Service (CIRAS) at Iowa State University are preparing to provide outreach, training, and technical assistance services to Iowa manufacturers on the application of e-business solutions. The IMEP effort is part of a national e-business initiative sponsored by the U.S. Department of Commerce, National Institute of Standards and Technology manufacturing extension partnership network. The services of

private sector information technology consultants will be incorporated in this outreach effort.

Similarly, the Iowa Department of Economic Development, the Small Business Development Centers, and the Software Information Technology of Iowa group are collaborating on a plan to provide basic and advanced workshops for small business owners. Private sector consultants will also be involved in this initiative. Additionally, community colleges and other higher education institutions are delivering continuing education and credit programs in e-business and information technology.

With the e-business revolution in full-swing, it may seem that these resources and initiatives are far behind the curve, and that businesses in Iowa are already well on their way to deployment of everything “e.” But the experiences of economic development and business assistance service providers suggest that there is as much work to do in the development of e-business capability as there is work to be done in expanding access to advanced telecommunications services. Both variables in the equation must be addressed if Iowa is to solve for the optimal result – Iowa’s position as a digitally competitive state.

The following descriptions of policy options was based on a series of discussions with service providers and stakeholders in April, May, and June, 2000. Additionally, a review of recent literature and background information from public sources has been included. A list of participants in the discussions, along with a list of information resources is provided in the appendices.

The description of policy options should not be interpreted as a recommendation or endorsement. Rather, this information is intended to reflect the full range of policy options, and the perspectives of the different participants in the discussions.

## **Policy Options for ATS Deployment**

If the goal of statewide access to affordable advanced telecommunications services is to be achieved, appropriate public policy initiatives should be considered. Without question private service providers have the capability to deploy broadband telecommunications services, and many service providers will expand deployment of advanced telecommunications services – particularly in areas where there are greater opportunities for a return on investment. The questions are, “When will the deployment be statewide, at what level of broadband service, and at what cost?” The same market forces that are working to accelerate deployment of broadband services in some areas of the state are barriers in other areas. Standing back and watching the marketplace competition is a policy option that may not assure broad-based access to advanced telecommunications services.

If a laissez faire approach to ATS deployment can not work, then what are the public policy options that will help achieve broad-based access? As described in the introduction, the policy options can be categorized as either “Supply Side” or “Demand Side” strategies. Supply Side strategies refer to policy options that will either cause private service providers to deploy services that would otherwise not be provided, or cause those services to be deployed sooner. Supply Side strategies may also include options for encouraging public service providers to deploy ATS. Supply Side strategies are further categorized as public investments, use of existing state assets, and establishing regulatory policies.

Demand Side strategies refer to policy options designed to stimulate market demand for advanced telecommunications services, and create greater opportunities for service providers to secure a necessary return on investment, and reduce the risk of deploying advanced telecommunications services. These strategies are also organized into the subcategories of public investment, use of existing state assets, and regulatory options.

### **Supply Side Strategies**

Policy options for expanding or accelerating deployment of advanced telecommunications services must consider both the direct costs and operational issues, as well as the indirect effects of policies on marketplace behaviors. The creation of financial incentives for ATS could have the unintended effect of delaying deployment that would otherwise have occurred, because the service provider wishes to exploit the opportunity to secure the benefits of the financial incentives. The creation of new regulatory policies relating to ATS could be viewed by service providers as an action that diminishes the quality of the business environment in Iowa, inhibiting plans for future private investment. Policies designed to enable and encourage the entry of public sector providers into the marketplace could also discourage private investment in ATS deployment.

Discussions with service providers clearly indicated that the policy options proposed as a result of the various planning efforts would be keenly analyzed. Their analyses will likely focus on the potential effects on their respective competitive positions. Many

service providers have expressed the position that any financial incentives or other Supply Side strategies should be designed to be “competitively neutral,” i.e., should not provide a competitive advantage to any other existing or potential service providers.

### **Cost Estimates**

A wide range of cost estimates for administering a direct financial assistance program was discussed with service providers and other participants in this policy review. A current assessment of the status of ATS deployment in Iowa is not yet available, and estimating costs is further complicated by the lack of a single definition for advanced telecommunications services. Representatives of service provider organizations indicated that they could assist with the development of a cost estimate, if the State could define the desired level of service (speed). Pending the development of more detailed assessments and cost estimates for broad-based ATS deployment, the following are a few ways to identify the range of potential costs.

#### ***Universal Service Fund Benchmark***

Assume that it would cost every household in Iowa an additional \$10 per month to secure universal access to advanced telecommunications services. For the purposes of comparison, assume the cost for universal access to basic telephone service is \$1 per month. As of 1995, there were 1,065,243 households in Iowa. If you accept these assumptions, the total annual cost for providing advanced telecommunications services through a universal service fund mechanism would be \$127,829,160.

#### ***Iowa Communications Network Benchmark***

The annual expenses for the Iowa Communications Network are \$53,325,000. This includes depreciation, costs for equipment maintenance and upgrades, and operational costs. Sources of funding for these costs include revenues from ICN users, state appropriations, and external sources such as federal grants and contracts. Some service providers have suggested that the State should expect to invest as much in securing advanced telecommunications services through private service providers as it invests annually in the ICN.

#### ***Telecommunications Sales and Use Tax Benchmark***

Legislation that was considered by the Iowa General Assembly during the 2000 legislative session would have made telecommunications equipment exempt from the sales and use tax. A fiscal note published by the Legislative Fiscal Bureau estimated that if the tax exemption were enacted, the state would forego \$2.9 million in FY2002, \$6.4 million in FY2003, \$10.5 million in FY2004, \$15.3 million in FY2005, and \$21 million in FY2006 in revenue. While this is not based on any estimate of cost for ATS deployment, some service providers suggested that this could be viewed as an attainable amount for the purposes of securing resources for implementing a state ATS initiative. For example, the revenue from the tax could be reallocated through the General Fund to support an ATS program, or service providers could be provided with a credit against the tax for investments made in ATS deployment.

It should be noted here that most service providers seemed to favor implementing the tax exemption as a basic change to improve the overall business climate – making it possible for further private investment in advanced telecommunications services.

The draft report of the Governor’s Strategic Planning Council also identified the need for a rebate on the telecommunications sales tax. The report includes the following recommendations:

- Rebate the telecommunications sales tax on purchases of advanced telecommunications equipment for use in rural communities.<sup>5</sup>

The following sections provide a brief description of the primary Supply Side policy options. Each policy option includes a description of relevant operational issues, a range of costs (if available), and a review of applicable perspectives of the various service providers and stakeholders.

## **Public Investment**

### ***Provide Direct Financial Incentives to Service Providers***

The State of Iowa could establish a new financial assistance program designed to enable private service providers to deploy advanced telecommunications services in defined geographic or service areas. Service providers could apply to a designated state administrative entity for the financial assistance. Eligibility criteria would need to be established for the program, including but not limited to the following:

- Eligible Applicants. It would be necessary to specify what service providers could apply for financial assistance under the program – existing private service providers, service providers that are new to a service territory, or public service providers, e.g. municipal utilities.
- Define advanced telecommunications services. For the purpose of determining whether a proposed activity is eligible for financial assistance, it would be necessary to define a minimum level of ATS services, e.g. 256K. While service providers would likely be asked to identify how the services would be provided, the program would not specify the type of technology to be used to deploy ATS. The definition of minimum ATS services would be modified by the administrative entity as necessary and as technologies continue to advance.
- Eligible Uses. The program would need to specify parameters for the use of program resources. For example, the program might limit the use of resources to one-time capital expenditures, and exclude expenditures for on-going operational costs.
- Rating Criteria. Applicants could be asked to provide other information that could be used to evaluate their proposals. This information could be used to score applications against appropriate criteria. For example, applicants could be asked to show that the deployment of ATS would not be feasible in the absence of the public investment. Or they might be asked to provide a plan for upgrading services in future years. The use

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<sup>5</sup> May be affected by action taken on 2010 tax recommendations.

of rating criteria would be particularly important if financial resources for the program are limited, or if the program were administered as an annual competitive application process.

- **Confidentiality.** It would be necessary to include provisions in the program which assure that proprietary information about technology or business operations would be kept confidential. The disclosure of such information could be viewed by service providers as a barrier to participation in the program. The standard confidentiality policies used in the State's economic development programs, if applied to an ATS financial assistance program, would provide an appropriate assurance of confidentiality.

As noted previously, it has not been possible to develop a detailed cost estimate for the deployment of advanced telecommunications services in Iowa. For similar reasons, a cost estimate for a direct financial assistance program cannot be determined. However, there are some lessons from the implementation of other financial assistance programs that could be instructive. In other circumstances, when a comprehensive cost estimate was not available at the inception of a financial assistance program, the implementation of the program during the first year provided an answer. By making sufficient resources available through a program to attract applications from interested service providers, an estimate of total demand can be established for financial planning in succeeding years. A similar estimate could be achieved through a pre-application process.

Competitive Neutrality. Private service providers emphasized the importance of maintaining "competitive neutrality," and cautioned that any State program to provide direct financial assistance to service providers could put the State in the position of choosing winners and losers (one service provider over another). It was also suggested that it would not be feasible or cost effective for the State to provide financial assistance to multiple service providers serving the same geographic area. For these reasons, most private service providers suggested that other mechanisms for providing incentives be considered.

#### ***Provide Indirect Financial Incentives (Tax Credits) to Service Providers***

The State of Iowa could establish income tax incentives to encourage private service providers to expand or accelerate the deployment of advanced telecommunications services. Appropriate state administrative entities would be responsible for determining the eligibility criteria for participation, such as the level of advanced telecommunication service for which the investment tax credit would be provided. Without a current, comprehensive assessment of the status of ATS deployment in Iowa, it is not possible to estimate the total value of the tax credits.

Other economic development programs have been established in Iowa to provide investment tax credits to companies that locate or expand in the State of Iowa: the New Jobs and Income Program, and Enterprise Zones. If projects meet the eligibility criteria under these programs, they are eligible for various benefits including a 10 percent investment tax credit. For illustration purposes only, if the creation of a 10 percent information technology investment tax credit stimulated \$127 million in private

investment in IT infrastructure, then tax credits could be provided in an amount up to \$12.7 million, assuming the private telecommunications companies had taxable income during the tax year in which the investment was made.

To the extent that the digital divide is affected by income and other characteristics used to describe disadvantaged geographic areas, it may be possible to use the existing network of enterprise zones to target the provision of tax credits and other incentives to stimulate the deployment of ATS. In addition to enterprise zones for economic development and housing, enterprise zones and associated incentives could be created for advanced telecommunications services and other information technologies.

Issues to consider in the development of tax policies to encourage investments in advanced telecommunications services include: 1) the extent to which tax benefits would be provided for investments that would have occurred without market interventions, and 2) the extent to which the tax credits would be of any benefit to telecommunications companies that have low taxable income. Again, the degree to which any indirect incentive is viewed as being “competitively neutral” could significantly affect its success or failure.

Generally, telecommunications services providers might suggest that improvements in the overall tax treatment of the various providers – improvements that would provide fair treatment to all service providers – would make the investment climate more attractive when compared with other states. For the service providers with a business presence in multiple states, investment decisions can be influenced by the marginal return on investments that can be achieved in the respective states and regions.

***Provide Direct or Indirect Financial Resources for Iowa’s Technology Infrastructure***

It may be possible to pursue initiatives that would provide opportunities for service providers to expand markets and reduce deployment costs while remaining “competitively neutral.” One possible initiative would be to explore the creation of a Network Access Point (NAP) in Iowa. A Network Access Point serves as a junction for telecommunications traffic among multiple service providers. The junction point is where one provider hands off to another. The nearest Network Access Points to Iowa are currently in Kansas City and Chicago.

The State of Florida recently took action to encourage a Network Access Point. As part of an electronic commerce bill signed by Governor Jeb Bush in May, the State of Florida has appropriated \$700,000 for FY2000-2001 to reimburse eligible companies for sales tax payments made on equipment specifically associated with the creation of a network access point (a carrier-neutral, public-private Internet traffic exchange point). Equipment eligible for reimbursement includes asynchronous transfer mode switches, digital subscriber line access multiplexers, routers, servers, multiplexers, fiber optic connector equipment, database equipment, and other network equipment used to provide broadband technology and information services.

### ***Provide Direct Financial Incentives to Communities***

Instead of providing financial incentives directly to telecommunications service providers, the State could provide incentives to Iowa communities. Communities, including counties, groups of communities, or other geographic configurations, could apply for financial assistance for investments in advanced telecommunications services. The public entity (community) applying for assistance would be responsible for partnering with appropriate service providers to deploy the advanced telecommunications services. The structure of the program, including eligibility and rating criteria could be similar to the criteria used for the service provider incentive program described previously. Other elements of this approach might include the following:

- A participating community could be required to have a comprehensive information technology plan – including plans for ATS deployment, training for business, government, and citizens in the use of the technology, and integration of ATS into other community development plans.
- Communities as well as service providers could be required to provide matching funds.

This option was explored with service providers and other stakeholder groups during the review process. Generally, the community approach was viewed as being more “competitively neutral” than direct financial assistance to service providers. Most communities in Iowa have not integrated advanced telecommunications services as an issue for the community economic development strategies. The creation of this incentive structure – coupled with state support for community planning activities – could encourage more communities to include ATS in their economic development plans.

### ***Provide Direct Financial Incentives to Consumers***

Generally, most service providers have expressed the position that any direct financial assistance for the deployment of advanced telecommunications services should be distributed through consumers as much as possible. By leaving the choice of service providers in the hands of consumers, the selection of service providers would be more market driven, and therefore be “competitively neutral.” The further removed government is from the selection of winners and losers, the more comfortable the service providers will be.

The challenge of providing financial incentives for ATS deployment through consumers is to develop a mechanism that would have sufficient impact on the marketplace to make a difference. If every household in Iowa were provided with a voucher (or tax credit) in the amount of \$120 which could be applied to advanced telecommunications services, it might help increase consumer demand. Another option would be to provide more targeted financial assistance to help assure that key industries had access to advanced telecommunications services.

Discussions with service providers and stakeholders did not result in any specific ideas for consumer-driven financial incentives for ATS. It may be appropriate to conclude that exploration of this option reflected the strong orientation of the participants toward

market-based solutions, and a reluctance to place government in a position to select the service providers who will prevail in the marketplace. Most of the policy options relating to the role of consumers in the deployment of ATS are included in the section addressing Demand Side strategies.

## **Regulation**

### ***Deregulation***

Regulated telecommunications services providers have strongly asserted that Iowa's regulatory framework inhibits investment in advanced telecommunications services. Requirements placed on regulated exchanges affect the rate of return on investment, and to the extent that service providers have choices about where to make investments it is rational for those providers to make investments where there is the greatest rate of return.

Generally, all service providers expressed the position that decisions concerning the deployment of advanced telecommunications services are affected by return on investment analyses, and that they favor a regulatory environment that provides all providers with a fair opportunity to compete. The assertion by regulated providers that investment decisions are made based on factors affecting return on investment, including regulation, is credible and substantiated by other service providers.

Exploring alternatives for modifying the regulatory framework for telecommunications service providers is a policy option that could affect investment decisions concerning the deployment of ATS. However, the extent to which changes in regulatory policy will accelerate deployment of ATS cannot be predicted. As is the case with changes in tax policy, it is plausible to suggest that regulatory changes could improve the business environment and make conditions more favorable for the deployment of advanced telecommunications services.

### ***Expand Universal Service Fund to include Advanced Telecommunications Services***

The process of implementing a universal service fund strategy for ATS involves three steps: 1) Establishing a definition of advanced telecommunications services – a minimum level of service that should be provided by telecommunications service providers to all Iowans. 2) Assessing the level of access to the defined level of service and identifying gaps in service delivery. 3) Determining an estimated cost for providing these services, and establishing rates to be paid by all users in order to provide resources to compensate service providers for delivering services where they would otherwise not be provided.

The Iowa Utilities Board is currently examining policy options relating to the use of the universal service fund mechanism to support current levels of telecommunications services in Iowa and the inclusion of advanced telecommunications services. IUB staff has prepared an initial report to the Board suggesting that the FCC "universal service" definition should be adopted in Iowa. This definition does not include advanced telecommunications services. This report is expected to be available for public review in

late June. The FCC and regulatory authorities in other states are facing the same challenge with defining an appropriate universal service standard and establishing the affordability thereof.

While telecommunications service providers have expressed some interest in using a universal service fund strategy for advanced telecommunications services, there are several factors that should be carefully considered. These issues were identified during discussions with the members of the Iowa Utilities Board and staff.

The Federal Communications Commission and other state regulatory bodies are presently focusing the application of universal service fund policies on basic telecommunications services, not including advanced or broadband telecommunications services. A universal service fund to support basic services is required by federal law. Decisions to include advanced services are dependent on consumer expectations and on the cost of providing services.

If the FCC and other states are exercising caution in the use of the universal service fund strategy for advanced telecommunications services, it is because of the cost of adding additional services. There also is not a broad-based consensus on the definition of a minimum level of universal service for ATS because rate payers (consumers) would experience tangible increases in costs, and because the service providers are no longer limited to traditional providers of telephone services.

Establishing an attainable “level of service” for advanced telecommunications services – a required first step for the implementation of a universal service fund – could be a step that leads to numerous unintended consequences. One of the dangers is that the definition of an advanced telecommunications services “level of service” established for the purposes of a universal service fund could be far below the level of speed and technology that would be required for Iowa to keep pace with changes in technology.

### **Existing State Assets**

The Iowa Communications Network (ICN), a telecommunications service provider to federal and state agencies, schools, and other authorized users, represents a substantial public investment in the telecommunications infrastructure in Iowa. The ICN was created to enable the delivery of distance learning and other government services, and it now provides full motion video conferencing services to 706 classroom sites state-wide. Because the State of Iowa owns over 3000 miles of fiberoptic cable installed in 99 counties throughout Iowa to provide the backbone telecommunications service for the ICN, it is appropriately viewed as an existing state asset that could be used to deliver advanced telecommunications services to Iowans.

### ***Expand Authorized Uses and Users of ICN***

The draft report of the Governor's Strategic Planning Council (June 9, 2000) includes the following recommendation concerning the use of the ICN to provide advanced telecommunications services in Iowa.

- If no private telecommunications provider is willing and able to provide the services [advanced telecommunications services] requested in an RFP, amend Section 8D of the Iowa Code to permit the Iowa Communications Network to extend its facilities and provide such services at nationally competitive rates; provided, however, that the community seeking access to such services must:
  - Contribute to the cost of the investment in new facilities and equipment required to provide the service; and
  - Provide contractual commitments from customers to purchase a prescribed level of such services for a defined period of time.
- If the ICN provides such advanced telecommunications services where no private provider is willing and able to do so, the ICN should sell its facilities to a willing buyer when the market justifies private sector provision of such services.

Technically, the Iowa Communications Network has the capability of delivering advanced telecommunications services in Iowa. For example, according to a recent survey commissioned by the Iowa Department of Education, over 1000 Iowa school buildings have access to the Internet through a leased T1 facility. Most of these connections are provided by the ICN.

#### **Predominant Internet connectivity by building**

<b>Type of Connection</b>	<b>Number of buildings</b>	<b>Percent of total buildings reported</b>
T1 (leased line 1,544 kilobytes per second)	1044	57.5%
ADN (Advanced Digital Network)(leased line 56 kbs)	449	24.7%
Modem (28.8 to 33.6 kbs)(kilobytes per second)	104	5.7%
Modem (56 kbs)(kilobytes per second)(not V.90 capable)	81	4.5%
Modem (56 kbs)(kilobytes per second)(V.90 capable)	70	3.9%
DSL (Digital Subscriber Line)	21	1.2%
ISDN (Integrated Services Digital Network)	19	1.0%
Modem (14.4 kbs)(kilobytes per second)	14	0.8%
Cable Modem Service	13	.7%

Table provided courtesy of the Iowa Department of Education and Nancy J. Maushak, Texas Tech University.

As a public agency, the Iowa Communications Network has indicated that it is prepared to deliver services consistent with any modification of authorized users and uses specified in Chapter 8D, subject to the approval of the General Assembly and the Governor.

While it is technically possible for the ICN to deliver advanced telecommunications services in Iowa, it should not be assumed that it is any more feasible for ICN to deliver ATS in underserved areas of Iowa than it is for private telecommunications service providers. The principal asset of the ICN is the backbone network, and ICN faces the same challenges of providing service to the consumer on the “last mile” as any other service provider. Further, the number of circumstances in which the conditions for the proposed policy will apply are not yet known. There is anecdotal information concerning situations where an ICN facility would provide the nearest point of access for services. But until a comprehensive assessment is completed, it will not be possible to document the instances in which a private telecommunications provider is unwilling and unable to provide the services.

Finally, it should be noted that most private telecommunications service providers in Iowa have expressed opposition to the expansion of authorized uses and users of the ICN.

#### ***Lease Available ICN Backbone Capacity***

The draft report of the Governor’s Strategic Planning Council (June 9, 2000) also includes the following recommendation concerning the use of the ICN to provide advanced telecommunications services in Iowa.

- Amend Section 8D of the Iowa Code to permit the Iowa Communications Network to lease facilities or excess capacity on ICN facilities to private telecommunications providers in order to facilitate provision of advanced telecommunications services to Iowans by such private providers.

The principal existing State asset associated with the ICN is the backbone of the network. It is capable of providing advanced telecommunications services in all of Iowa’s 99 counties. The Council’s draft recommendation suggests that by making excess ICN capacity available to private providers, those private providers will be better positioned to provide advanced telecommunications services to Iowans. The capacity of private service providers to deliver ATS could be enhanced in one of two ways. Either their costs could be reduced, because they would not be required to incur the cost of installing their own backbone communications facility, or because the ICN facilities would provide them with access to regions of Iowa that would otherwise not be feasible. An associated benefit of this approach is that it could provide the ICN with a new source of needed revenue to maintain and upgrade services to existing authorized users.

The extent to which these objectives could be achieved through the proposed revisions to Chapter 8D will remain a matter of speculation. Some private telecommunications service providers in Iowa have expressed the opinion that Iowa has all the backbone fiber it needs, and that making the ICN backbone available for private use will do nothing to help extend ATS the “last mile” to consumers. Some private providers also view

proposals for leasing ICN backbone facilities as a direct competition by a publicly subsidized facility. And some other private service providers have expressed reservations, because they believe that leasing the ICN backbone facilities could potentially open the door for other competitors to enter their markets.

While some private service providers have expressed support for the concept of leasing ICN backbone capacity to the private sector, it has also been suggested that the ICN should be required to lease its capacity at an “unsubsidized” market rate. This parameter would require ICN (or perhaps the Iowa Utilities Board) to develop a cost basis that would be comparable to private sector rates for backbone telecommunications traffic. Further, it would likely make the lease of ICN capacity less attractive compared with other private sector alternatives.

Before proceeding with the proposed modification of Chapter 8D, a possible first step might be the exploration of alternative pricing strategies for the facilities, followed by a non-binding request for information from private service providers to gauge the level of interest in leasing the facility.

### ***Promote the Development of Municipal Utility Services***

Since 1994, 43 Iowa communities have held public elections to authorize the establishment of municipal communications utilities. Cedar Falls, Manning, Harlan, Hawarden, and Muscatine are communities that have proceeded with implementation of cable and other telecommunications services. For the purposes of this review, the origins and structures of municipal telecommunications services in Manning and Muscatine were explored. Representatives of those communities and the municipal service providers indicated that the primary motivation for pursuing the development of the communications utility was dissatisfaction with the existing private service providers. The most evident characteristic of these cases is the community leadership that has been required to not only secure passage of a community referendum, but to proceed with the challenges of starting up a telecommunications business in a market already served by a private provider.

The State of Iowa could take further steps to document and develop models for other communities to use when exploring the creation of a municipal telecommunications utility. In collaboration with appropriate municipal service organizations, the State could provide training and technical assistance to municipal utility staff and community leaders. The pursuit of this option would expand competition, and could accelerate deployment of advanced telecommunications services not only through the municipal utilities, but also through existing telecommunications providers that would be motivated to stave off unwanted competition.

It should be noted that the long-term success of municipal communications utilities has not yet been secured. The municipal utilities face the same business challenges that the incumbent telecommunications providers face, and they have to address the same issues that other start-up businesses do. Discussions with municipal service representatives and with private telecommunications company representatives concerning strategies for deployment of advanced telecommunications services were remarkably similar.

While some private telecommunications providers have expressed concern that municipal utilities are using their public position (and revenue sources) as a competitive advantage, they have also acknowledged that there is at least some validity to the concerns of consumers about the level and quality of services provided by the incumbent provider. Cross subsidization of business units within the private sector also occurs, and is not unique to the public sector.

Private service providers have clearly expressed opposition to further expansion of municipal communications utilities, and they would likely oppose any State effort to promote the municipal service option.

### ***Limit Expansion of ICN***

Private telecommunications service providers have suggested that restricting, not expanding, the authorized use of the Iowa Communications Network would have the effect of accelerating deployment of advanced telecommunications services in Iowa. As long as the possibility exists that the ICN could erode their customer base by expanding the list of authorized users and uses, then they will be reluctant to invest in facilities to expand services.

Specifically, private service providers suggested two steps that would create a more favorable climate for private investment in advanced telecommunications services. First, they suggest that a long-term plan be established for the Iowa Communications Network, and that the plan be followed. They believe that providing some stability and predictability concerning the ICN could ease uncertainty about the risk of making investments. This suggestion was directed not only at the ICN, but all policy makers including the General Assembly. Every time a bill gets introduced in the legislature to expand the use of the ICN, they believe that uncertainty is created and investment is inhibited.

Second, the State should establish a policy that future public initiatives relating to the use of telecommunications services for public purposes be developed with a private sector orientation. Specifically, they indicated that the climate for private investment in telecommunications services would be enhanced if the State could assure that ICN authorized users and uses would expand no further, and that private providers would be solicited for proposals to deliver new telecommunications services wherever possible.

Generally, private service providers acknowledged that it was not practical for the State to divest itself of the investment made in ICN, or to restrict the current authorized uses of the ICN. Further, most acknowledged that it was appropriate and reasonable for the state to maintain and upgrade the technology in order to provide quality services to existing authorized users – particularly for educational purposes.

Private companies do make investment decisions based on an expected return on investment. The presence of a competitor, one which is perceived as having the capacity

to provide services at a rate subsidized with public resources, does have an impact on private investment decisions.

The extent to which restrictions on further expansion of the ICN will stimulate private investment in advanced telecommunications services cannot be predicted. Restrictions on the ICN alone may not be sufficient to assure broad-based access to affordable ATS. The crafting of a comprehensive state policy to facilitate the deployment of ATS must balance the need to maximize private investment while retaining capacity to deliver services in the absence of private market solutions.

***Limit Expansion of Municipal Utility Services***

Private telecommunications service providers have suggested that restricting, not expanding, the entry of municipal utilities into the telecommunications business would have the effect of accelerating deployment of advanced telecommunications services in Iowa. The competitive issues associated with municipal utilities are similar to the issues relating to the ICN. As long as the possibility exists that a municipal utility could erode their customer base entering the market with the support of municipal resources, then they will be reluctant to invest in facilities to expand services.

As noted previously, the entry of municipal utilities into telecommunications services appears to be driven by consumer and community dissatisfaction. To the extent that this is true, it may not be reasonable to expect that private investment will be increased by removing the municipal service option. To the contrary, there is evidence that private service providers are engaging the competition to the benefit of communities and consumers.

The municipal utilities seek to retain the option to provide telecommunications services, and did not express a desire to actively solicited state support to expand their entry into this market.

## **Demand Side Strategies**

Policies that would result in an increased demand for advanced telecommunications services received the most broad-based consensus among telecommunications service providers, consumers, education representatives, and businesses who participated in the information gathering process. It was widely acknowledged that if the demand exists for advanced telecommunications services, supply will generally follow. Several policy options are outlined below that would help identify and stimulate demand through education, capacity building, and assessment and planning efforts.

The draft report of the Governor's Strategic Planning Council also identified the need for increasing demand and providing access to technology. The report includes the following recommendations:

- Increase demand for electronic goods and services and lower the cost of providing advanced telecommunication services statewide by:
  - providing low-cost and convenient lifelong training and education (particularly for small businesses and the elderly) in the use of advanced telecommunications equipment and its practical applications; and
  - expanding electronic access to business, educational and governmental services (particularly licensing, registration and permitting processes).
- Ensure that every public library in Iowa has at least one computer that members of the public may use to access advanced telecommunication services.

## **Public Investment**

### ***Financial Resources for Community Capacity Building***

#### **Community Assessment and Planning**

Many communities lack an understanding of the telecommunications infrastructure that currently exists in their area and are, therefore, unable to identify and address their telecommunications needs. The State of Iowa could provide communities with appropriate resources to help them complete telecommunications infrastructure assessments and develop plans to address identified gaps.

The Iowa Department of Economic Development (IDED) is currently funding three assessment pilot projects that have the potential to be replicated statewide. This pilot includes a step-by-step process that helps communities work with service providers in their area to understand their existing telecommunications infrastructure and develop and implement a plan to fill gaps in the infrastructure. The State of Iowa could develop an assistance program that would help build capacity in communities to assess and plan for telecommunications. This program could:

- provide funds to IDED to engage a partner community development organization to guide communities through a telecommunications assessment and planning process;
- provide funds to IDED to engage a qualified consultants(s) to work with on a statewide basis to assist communities;

- provide funds directly to communities to hire a consultant of their choosing to complete the assessment; and/or
- provide matching funds for Americorps grants, which are being used to support volunteer efforts relating to the access and use of technology in disadvantaged communities.

#### Best Practices/Modeling

Several factors, including dissatisfaction with an incumbent service provider and the desire to bolster economic development, have led several communities to seek alternatives to their existing providers. In an effort to bring advanced telecommunications services to their consumers and businesses, many communities are looking for what has worked for other communities in similar situations.

Although there is no single solution for every community that wants to bring advanced telecommunications services to their area, there are many different models (both through traditional and non-traditional service providers) that communities can review and adapt to their unique circumstances. Currently, there is no single source of information on these models or best practices in telecommunications services.

The State of Iowa could assist communities that are looking for models of community technology and telecommunications plans. This could be accomplished by developing and distributing a comprehensive review of effective telecommunications models, including successful models involving traditional services providers, as well as non-traditional service providers. This could include information such as what resources a community needs, what groundwork needs to be covered, as well as the advantages and disadvantages of each model.

One source of information for best practices and models is the Federal Communications Commission's web-based Community Broadband Deployment Database. The database went live on the Internet on June 6, 2000, and will serve as a national clearinghouse for local communities to share news and information about their broadband deployment projects. (Additional information on this project is included in the Appendix.)

#### Assessing consumer demand for service

As part of the assessment process, the State of Iowa could assist communities and regions in conducting market research to determine the advanced telecommunications needs of businesses, schools, consumers, and local government. This research could be shared with communities and incorporated into the overall telecommunications assessment, which can serve as the basis for communities to work with local service providers to respond to ATS needs.

While some existing service providers are positioned to gauge and respond to market demand for ATS, others do not appear to be oriented toward anticipating demand and utilizing marketing research. In some communities, this assessment tool could contribute to market development.

### ***Financial Resources for Technology Demonstration***

New, emerging technologies are being developed at a rapid pace by the private sector, as well as public entities such as the Iowa Communications Network. For example, the ICN is currently engaged in a pilot study with Iowa State University in the deployment of wireless technology. As technology continues to change, the State of Iowa must remain abreast of new technologies that are being made available.

Although these projects are largely being carried out by the private sector, there may be an appropriate role for the State of Iowa or the ICN to participate in the demonstration of these new technologies.

### ***Financial Resources for Business Capacity Building***

It is largely recognized that companies of all sizes can profit from advanced telecommunications services; however, many lack an understanding of the benefits and advantages of ATS. Telecommunications providers and consumers alike supported capacity building efforts as an effective tool to increasing demand for ATS. There are two primary efforts the State of Iowa can undertake that will raise awareness about ATS and enhance businesses understanding of ATS to increase demand. This can be accomplished through e-commerce training and broadband demonstrations.

The State of Iowa could provide funds for qualified entities to develop and implement e-commerce trainings for business and industry. This training could introduce businesses to the benefits of e-commerce along with instructions on developing and implementing an effective e-commerce strategy that complements their traditional business strategy.

Likewise, financial resources could also be provided by the State to develop and implement demonstrations of broadband Internet access. Business and consumer representatives who provided input into this process feel that demand for advanced telecommunications services is low because companies have never seen or used high-speed Internet. Providing businesses with an opportunity to experience first-hand the benefits of broadband access will likely result in more knowledgeable consumers and an increased demand for ATS.

### ***Financial Resources for Business Collaboration***

In addition to providing training and information to businesses, the State of Iowa could increase capacity by implementing a buyers' consortium, which offers advanced telecommunications services at a reduced cost to participating businesses. A similar program, VirginiaLink, was implemented recently by the State of Virginia. VirginiaLink is a multi-vendor, broadband telecommunications program which offers Virginia businesses that join a buyers' consortium – including service resellers and ISPs – advanced telecommunications services at discounted rates. VirginiaLink delivers statewide access to distance-insensitive, state-of-the-art services – including Internet access, as well as capacity for voice, video, and data communications.

The creation of VirginiaLink was led by Governor Jim Gilmore and Don Upson, Virginia's Secretary of Technology. The Office of the Secretary of Technology served as

a catalyst for the comprehensive project, bringing together a collaborative team to launch this initiative. The team includes Virginia's Center for Innovative Technology (CIT), Virginia Tech, and the individual service providers.

VirginiaLink will draw on multiple providers, each delivering specific service offerings. Subject to availability, VirginiaLink Consortium members will select from a menu of service provider offerings. Under separate agreements, MCI WorldCom and Sprint lead VirginiaLink's current service offerings for distance-insensitive statewide coverage. VirginiaLink will continue to explore similar arrangements with other providers. (Additional information on VirginiaLink is included in the Appendix.)

### ***Providing Resources for Individualized Educational Instruction***

As teachers begin utilizing electronic educational resources that are more graphically and information intense in the classroom, students must also have the ability to access these materials. As the use of these materials becomes more universal, every student in Iowa will need to have access to high-speed telecommunications services. Education representatives who participated in this effort identified individualized educational instruction as a leading telecommunications priority.

There are no readily available existing measures of home-based technology and Internet connectivity for students. Measures of connectivity are largely based on connectivity at school. For example, A recent survey by the Iowa Department of Education show that 62 percent of elementary students sometimes or almost always have access to technology through labs, while 50.3 percent have access through regular classrooms, and 45 percent have access through library media centers. Forty-five percent of secondary students almost always have access to technology through labs, 66 percent almost always or always have access through library media center, and 62 percent have access through regular classrooms.

Both the ICN and the private sector could have important roles in providing for connections between school and homes. The State of Iowa may need to determine a strategy to ensure that every student has access to the Internet at home.

## **Existing State Assets**

### ***Upgrading Iowa Communications Network Resources***

During the input process, many individuals noted the need for the Iowa Communications Network to upgrade its resources, particularly its video services. Specifically, the need for voice-activated microphones in ICN classrooms and equipping rooms with constant/continuous presence were identified as services that could be improved. The State of Iowa could review the need for these improvements and engage in an effort to address those needs that would make the ICN more usable for authorized users.

## **Regulation**

### ***Participation in Community Capacity Building***

As the regulating body of telecommunications utilities in the state, the Iowa Utilities Board could be an active participant in any business or community capacity building efforts the State may choose to undertake. This could include participation in reviews of best practices and models, community capacity building efforts, and statewide ATS deployment assessments.

## **Input Meetings**

May 22: US West  
May 22: Telecommunications Providers Group  
May 23: Education Telecommunications Council  
May 24: Citizen/Labor Representatives Group  
May 24: Manning Municipal Telecommunications Utility  
May 30: Rural Iowa Independent Telephone Association  
May 30: Business Representatives Group  
May 31: Iowa Telecommunications Association  
May 31: Iowa Communications Network  
June 1: Iowa Department of Economic Development  
June 2: Iowa Commission on Volunteer Service  
June 2: Iowa Utilities Board  
June 5: Iowa Network Services and Iowa Telecom  
June 5: Iowa Association of Municipal Utilities  
June 7: AT&T  
June 7: Iowa State University, Dean of Engineering  
June 9: Iowa Cable Television Association  
June 9: Iowa 2010: Governor's Strategic Planning Council Representative  
June 12: US West  
June 12: McLeod USA

## **Individual and Group Meetings Participants**

Jim Aipperspach, Iowa Association of Business and Industry  
Judy Albritton, AFSCME and Perry Public Library  
Michael Armstrong, City of Des Moines  
Willem Bakker, Iowa Manufacturing Extension Partnership  
Paul Blide, McLeod USA  
Al Bode, Charles City High School  
David Brasher, National Federation of Independent Businesses  
Tom Bredeweg, Iowa League of Cities  
Leann Brunnette, AT & T  
Ed Buchanan, Iowa Telecommunications Association  
Susan Cameron, Frontier Communications  
Beth Canuteson, Sprint  
Dennis Carlsen, NIPCO Development Corporation  
Jeff Carson, MMCTSU  
Jack Clark, Iowa Utility Association  
Joan Conrad, Iowa Utilities Board  
Stevin Dahl, North Central Regional Center for Rural Development  
Arvind Dandekar, FASTEK, INT.  
Beth Danowsky, Iowa Rural Development Council  
Bill Demuth, Iowa Department of Economic Development  
Jeanne Deering, Iowa Telecommunications Association  
Rand Fisher, Iowa Area Development Group  
Jerry Fitzgerald, MCI  
Paul Gormley, Center for Industrial Research and Service  
Tom Graves, Iowa Cable Television Association  
Dennis Guffey, Iowa Commission on Volunteer Service  
Gregg Hammann, McLeod USA  
Robert Haug, Iowa Association of Municipal Utilities  
Lorelei Heisinger Brewick, Carney, Appleby, Brewick & Nielsen P.L.C.  
Mark Joyce, Consulting & Marketing Associates  
Sue Lambert, Iowa Department of Economic Development  
David Lentell, Small Business Administration  
Michael May, Iowa Association of Municipal Utilities  
Jim Melsa, Dean of the College of Engineering, Iowa State University  
David Montgomery, Diocese of Davenport  
Diane Munns, Iowa Utilities Board  
Kathryn O'Shaughnessy, Bettendorf High School  
Doug Pals, Alpine Communications  
Jim Peterson, Frontier Communications  
Pamela Pfitzenmaier, Iowa Public Television  
Joan Phillips, City of Manning  
Max Phillips, US West  
Chris Pirillo, Lockergnome  
Judy Pletcher, Rural Iowa Independent Telephone Association  
Gail Quinn, League of Women Voters of Iowa  
Mike Ralston, US West  
Betsy Roe, Governor's Strategic Planning Council  
Joseph Rude, Century Systems  
Ken Sagar, Iowa Federation of Labor  
Todd Schultz, Iowa Telecom  
Tom Sepic, Iowa Telecommunications Association  
Bill Smith, Iowa Utilities Board  
Julie Smith, Iowa Association of Municipal Utilities

Mike St. Clair, Sprint  
Curt Stamp, US West  
Lisa Stump, Iowa Utilities Board  
Jim Sutton, Iowa State Education Association  
Harold “Tommy” Thompson, Iowa Communications Network  
Allan Thoms, Iowa Utilities Board  
Mary Travillian, Area Education Agency 6  
Ray Vawter, Iowa Utilities Board  
Richard Vohs, Iowa Network Services  
Teresa Wahlert, US West  
Mike Weis, Rural Iowa Independent Telephone Association  
Gary W. Wieskamp, Muscatine Power and Water  
Jon Winkel, Pioneer